Revision B changes are detailed in the Document History Log on page 2.



Effective Date: November 14, 2017 Expiration Date: November 14, 2022

National Aeronautics and Space Administration John F. Kennedy Space Center, Florida

MISHAP PREPAREDNESS AND CONTINGENCY PLAN

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DOCUMENT HISTORY LOG

Status (Draft / Baseline / Revision / Canceled)	Document Revision	Effective Date	Description
Baseline			
Revision	A	3/1/12	Realigned Roles and Responsibilities to more closely parallel NPR 8621.1 and Center requirements.
			Added Aviation Safety Officer role and responsibilities.
			Added Mishap Program Analyst / Coordinator role and responsibilities.
			 Added requirement for organizational directors to provide the IA meeting room when identified as the responsible organization.
			 Added requirement for the responsible organization to assign a corrective actions point- of-contact immediately upon incident notification.
			Added requirement for the responsible organization to track CAP in NMIS.
			7. Updated NPR requirement numbers.
			8. Changed "shall" to "will" statements to comply with NPR 1400.1
Revision	A-1	1/14/13	Section 3.2, "Contractor and Grantee Mishaps": b. All contractor mishaps (44326) and associated corrective actions will be entered into the NMIS database (44714), updated when changes occur (every 30 days at a minimum), and tracked to closure.
Revision	A-1-2	9/9/14	Administrative change: 1. Global change, IRIS to NMIS; 2. Changed Public Release to Center Release where applicable 3. Clarified a responsibility for the Mishap Program Analyst, "Solicits potential IA membership for the December holiday period."

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Revision	В	11/14/17	a. Total rewrite to align with the new release of NPR 8621.1
			 b. Incorporated KDP-KSC-P-1474, KDP-KSC-P-3618, and part of KDP-KSC-P-1473 into this document. This Plan now the different KSC mishap processes in one location.
Revision	B-1	02/04/20	Administrative update to change title on each page and hyperlinks

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OVERVIEW

This Plan outlines how KSC intends to comply with the intent of; and the Center's responsibilities and process for mishap response, notification, investigation, endorsement and closure to prevent mishap recurrence as described in NPR 8621.1.

The Center Director or their Designee ensures Center and Program / Project personnel develop the necessary mishap preparedness and contingency plans to support their activities which are ready and capable to support a closed loop mishap investigation processes to include; mishap notification, funding for mishaps under the Center's jurisdiction, mishap response training and equipment, the selection of an Investigating Authority , the mishap investigation and investigation closure processes as identified in this Plan and NPR 8621.1.

KSC's Safety & Mission Assurance Directorate (S&MA) and the Spaceport Integration and Services (SI) Aviation Safety Officer (ASO) are required: to conduct appropriate mishap awareness training activities ensuring that Center employees are familiar with their responsibilities in the event of a mishap / close call. S&MA is to collaborate with NASA's Procurement Office (OP) to insert the appropriate Mishap and Close Call Reporting, Investigating, and Recordkeeping requirements, clauses and NASA Federal Acquisition Requirement (FAR) Supplements into NASA contracts, agreement or grants that meets the requirements of this Plan and NPR 8621.1.

Chief of Institutional Division will provide training, support, and help desk services to Center NASA Mishap Information System (NMIS) users.

KSC's Mishap Investigation Program Office (MIPO) provides guidance and assistance throughout the mishap process as necessary.

Protective Services provides emergency services support, as necessary, in accordance with their processes and procedures. Additional on-the-scene security presence to secure a mishap site may be requested on an as needed basis. Protective Services will provide fire and traffic mishap / accident reports to the Institutional Division Safety Office upon request.

Center personnel, when called upon, are expected to support and cooperate with a NASA mishap investigations as defined in this Plan, NPR <u>8621.1</u>.

KSC's Communication and Public Engagement Directorate (PX) will disseminate significant mishap information (i.e. casualties, damages, and any potential hazards) to the media and general public with the Investigating Agency IA's, the CD's and with KSC Emergency Manager's approval. PX, after coordination and authorization with the CD and NASA Headquarters (HQ), may promptly release any preliminary mishap information, video, and imagery to the media and general public relating to a work-

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related mishap involving the death or permanent disability of a NASA employee or any ongoing hazards as appropriate.

An exercise of the Center and Program / Project Mishap Preparedness and Contingency Plans via a realistic simulation or at a minimum a tabletop review, must be accomplished prior to NASA-managed launch and vehicle recovery activities. This simulation, exercises or tabletop reviews will include mission unique hazards, mishap interim response, IA formation and any additional communication and coordination to ensure a successful operation. At the conclusion of the review, simulation or exercise the Responsible Cognizant Safety Office will hold a lessons learned to identify any deficiencies in the MPCPs involved, update the plan(s) as needed, and take other necessary corrective actions to assure that the plan(s) can be effectively implemented in the event of a mishap.

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PREFACE

P.1 Purpose

The purpose of this plan is to define the roles and responsibilities associated with Kennedy Space Center's (KSC) mishap preparedness and contingency (MPCP) process as well as the specific requirements and procedures to be followed by KSC organizations for reporting, responding to, and investigating mishaps. By properly identifying "root causes and effects," recurrence of similar incidents will be prevented. The Mishap Preparedness and Contingency Plan does not dictate organizational-specific processes and procedures; however, it does specify certain basic roles and responsibilities for mishap preparedness, response and investigation. Each organization identified herein having a participatory role in the reporting, responding to, and investigating of mishaps will develop and implement any required supporting processes and procedures to supplement this plan. Unless explicitly addressed herein, NPR 8621.1 provisions have precedence.

P.2 Scope

This plan applies to all KSC personnel [federal employees, NASA contractors, and subcontractors and grantees as specified in their contracts or grants; and to other organizations (e.g., commercial partners, other Federal agencies, international parties, and tenants on Centers) as specified and described in written KSC operating agreements]. The Office of the Inspector General (OIG) and the Mission Directorate Associate Administrator (MDAA) roles and responsibilities are beyond the scope of this document. OIG and MDAA guidance can be found in Public Law 95-452, Inspector General Act of 1978, and NPR 7120.5, respectively. The "Comprehensive Emergency Management Plan (CEMP)" (KNPR 8715.2) and program-specific contingency plans such as those listed below have precedence over KSC-PLN-2807.

- <u>LSP-PLN-365.01</u>, "NASA Launch Services Program Mishap Preparedness and Contingency Plan" is in effect at all times and the specific mission unique plan for each mission applies from call-to-stations until the end of the launch vehicle mission."
- <u>LSP-PLN-365-03</u>, "NASA LSP Mishap Preparedness and Contingency Plan for Integrated Operations" applies from integration of spacecraft and launch vehicle hardware until call-to-stations.

P.3 Authority

NPR 8621.1, NASA Procedural Requirements for Mishap and Close Call Reporting, Investigating, and Recordkeeping

NPR 1441.1, NASA Records Retention Schedules

NPR 3792.1, Plan for a Drug-Free Workplace

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NPR 7900.3, Aircraft Operations Management Manual

P.4 Applicable Documents

KNPR 8715.2, Comprehensive Emergency Management Plan

KNPR 8715.7, KSC Construction Contractor Safety and Health Practices Procedural Requirements

KNPR 7900.3, KSC Aviation Safety Program

KDP-KSC-P-3009, Aircraft Emergencies

KDP-KSC-P-3007, Damage Assessment and Recovery

KSC-PLN-2807-Notification, KSC Mishap Notification Requirements

KDP-KSC-P-3612, Impoundment and Chain of Custody

KDP-P-3645, NASA Direct Construction Contractor Mishap Reporting Process

/Original signed by/

William Russ DeLoach

Director, Safety and Mission Assurance

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CHAPTER 1:TYPE A, TYPE B, NASA HIGH-VISIBILITY, AND CENTER HIGH-VISIBILITY MISHAPS AND CLOSE CALLS

A Center High-Visibility Close Call (CHV) investigations follow a process similar to NASA high-visibility requirements defined in NASA Procedural Requirement (NPR) 8621.1 except for the process identified in NPR 8621.1 that require action(s) external to the Center.

1.1 Readiness to Conduct Investigations

1.1.1 Center Director or Designee

Ensure Mishap Preparedness and Contingency Plan (MPCP) development for the Center and Program / Projects under their jurisdiction.

1.1.2 Chief, KSC's Safety & Mission Assurance Divisions / Offices

Establish, provide, and maintain a Cognizant Safety Interim Response Team (IRT) capability that meets the requirements of NPR 8621.1.

1.1.3 Responsible / Cognizant Safety Organization

- a. Conduct appropriate awareness training (e.g., potential hazards, any changes in configuration) and MPCP training to ensure that the Organization's employees are familiar with their responsibilities in the event of a mishap / close call.
- b. Ensure the IRT is aware of the hazards involved and is trained and able to support operations at Kennedy Space Center (KSC).

Note: The Responsible Organization (RO) coordinates with Chief Institutional Division (CID) at least 30 days prior to an operation if the RO intends to utilize the Institutional Division IRT personnel.

- c. Maintain IRT kits necessary to support the scope of the organization's potential mishaps.
- d. Coordinate the development of MPCPs for KSC-managed operations under their jurisdiction.
- e. Provide KSC's Mishap Investigation Program Office (MIPO) and their organization's Chief Safety Officer (CSO) a copy of approved MPCPs.

1.1.4 Mishap Investigation Program Office (KSC-led investigations)

- a. Develop and maintain the Center's mishap response and investigation plans and processes that meet the intent of NPR 8621.1 and Center requirements.
- b. Serve as Mishap Program liaison between the Investigation Authority (IA), the CD, and KSC organizations.

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- c. Establish and maintain a standardized process for investigating authority formation and mishap report approval, endorsement, release, corrective action development, and closure that includes formulating all necessary agreements and developing standardized documents in accordance with NPR 8621.1.
- d. Maintain access to the NASA Safety Centers up-to-date list of all personnel who have training and experience in mishap investigation, including information such as relevant training courses, date of training, and recent participation in a mishap investigation.
- e. Assist in the development of RO / Program / Project MPCPs.
- f. May review all KSC RO / Program / Project MPCPs that could operate within a KSC-managed area.
- g. May participate in KSC Spaceport Integration and Services (SI) or Program / Project mishap, crash or accident exercises / simulations, and lesson learned meetings.
- h. Serve as a member of the NASA HQ's Mishap Program Working Group.
- i. Solicit potential IA membership for the December holiday period.

1.1.5 Cognizant Safety Interim Response Team

- a. Be familiar with and have access to their Responsible Organization's MPCP and the Center MPCP requirements (source: NPR 8621.1).
- b. Take IRT training identified in NPR 8621.1 and the necessary training to safely perform IRT duties (e.g., personal protection equipment, bloodborne pathogen).

1.2 Mishap Response, Notification, and Classification

1.2.1 Mishap Response

1.2.1.1 Employee

- Take all necessary steps to protect themselves and fellow employees.
- b. Upon the occurrence of a mishap, immediately:
- (1) Cease work following any incident, even if there are no apparent injuries / damage.
- (2) For injuries to KSC personnel, call 911 or 867-7911 by cell phone or 853-0911 from Cape Canaveral Air Force Station (CCAFS).
- (3) Report all mishaps or close calls involving work-related personnel injuries/illness, government property damage, and confirmed exposures exceeding allowable limits to

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the appropriate cognizant safety office or the Institutional Division safety office at 321-867-7233 (7-SAFE), and inform your immediate supervisor.

- (4) Secure the incident scene and do not allow access until released by the Cognizant safety official.
- (5) Report for medical evaluation and treatment to the Occupational Health Facility (OHF) or, if not located at KSC, to a licensed health care provider for personnel exposure or suspected exposure to a hazardous substance exceeding allowable limits (quantity level or exposure time).

1.2.1.2 Employee's Supervisor

- a. Notify Institutional Division when a mishap or close call occurs at 321-867-SAFE (867-7233) and inform the appropriate level of management.
- b. After the initial notifications are made, provide any necessary assistance to safe the mishap site until the emergency response, security, and safety arrives.
- c. Support the Incident Commander (IC), Protective Services (PS), and Safety personnel as they safe the mishap site.
- d. Initiate drug testing for civil servants involved in a mishap resulting in a fatality, personal injury requiring immediate hospitalization, or in damage estimated to be in excess of \$10,000 to Government or private property (source: NPR 8621.1).

Note: Civil service employees will be tested in accordance with NPR 3792.1, NASA Plan for a Drug-Free Workplace. Contractor employees will be tested in accordance with the provisions of the applicable legal agreement(s) or company policies.

1.2.1.3 Emergency Response / Incident Commander

- a. Implement the procedures outlined in <u>KNPR 8715.2</u>, Comprehensive Emergency Management Plan.
- b. Relinquish site command to the IRT in coordination with Protective Services after completion of all rescue efforts and it is determined that there is no evidence of criminal wrongdoing.
- c. Secure evidence gathered at the scene until it can be provided to the IA, unless criminal wrongdoing is suspected.

1.2.1.4 Protective Services

a. Assist the IC in securing the mishap site to preserve evidence.

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- b. Determine if a security investigation is warranted due to any evidence of criminal wrongdoing. If not warranted, relinquish site command to the IRT.
- c. If requested by the IRT, provide an on-the-scene security presence to secure evidence gathered at the scene until it can be provided to the IA. In such an instance, Protective Services personnel can only be released by the IA chairperson or the MIPO (in the event it is determined a NASA IA will not be appointed for the incident).

1.2.1.5 Cognizant Interim Response Team

The IRT consists of two or more safety personnel with at least one being a Federal employee. The team is activated when notification is received of a potentially serious or high-visibility mishap or close call. To be considered "qualified IRT members," personnel must have completed the necessary training. The Safety Organizations maintains a list of personnel who are qualified to serve as IRT members.

- a. Immediately deploy to the mishap site when directed and initiate the Responsible Organization's MPCP.
- b. Support the incident response until a mishap classification determination is made.
- c. Assist the Incident Commander (IC) as requested.
- d. Take control of the incident scene after the IC has declared the site safe.
- e. Take all necessary steps to preserve mishap evidence.
- f. Document the scene through the use of photographs, video, or sketches.
- g. Identify witnesses and collect witness statements using the NASA KSC Close Call / Mishap Witness Statement, KSC Form 50-285.
- (1) Witness statements should be taken by civil service members of the IRT within the first 24 hours of the incident.
- (2) Witness statements are to be collected and secured by a civil service members of the IRT and must be properly protected and secured (source: NPR 8621.1).

Note: Witness statements are only considered privileged if collected by a Federal employee (source: NPR 8621.1).

h. Contact the Contracting Officer (CO) or Contracting Officer Representative (COR) to request permission to stop the Contractor's work and impound materials necessary to perform an investigation.

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- i. Collect and secure mishap evidence (e.g. debris and material) that could be damaged or lost due to exposure to weather or environmental conditions.
- j. Implement data impoundment actions in accordance with <u>KDP-KSC-P-3612</u>, the Impoundment and Chain of Custody procedure.
- k. Collaborate with the involved employees' supervisor concerning drug and alcohol testing.

Note: Civil service employees will be tested in accordance with NPR 3792.1, NASA Plan for a Drug-Free Workplace. Contractor employees will be tested in accordance with the provisions of the applicable legal agreement(s) or company policies.

- I. Provide the MIPO or IA with all evidence gathered at the scene, all data pertaining to the investigation (including impounded records and witness statements), a status of impounded records / equipment, and a description of the actions taken.
- m. Notify KSC's Communication and Public Engagement (PX) Directorate of any casualties, damages, or potential hazards to the public.
- n. Relinquish command of the mishap site to one of the following, the IA chairperson or the MIPO.

1.2.2 Mishap / Close Call Classification and Notification

- a. Mishap notification is accomplished in accordance with Mishap KSC-PLN-2807-Notification, Mishap Notification Requirements.
- b. In order to facilitate the timely investigation and other notification requirements of NPR 8621.1, the responsible Civil Service or Contractor program / project or directorate organization will immediately (within one hour) provide initial notification by telephone to 867-7233 (7-SAFE), email, or in person to KSC Institutional Division and the CO or COR. Initial notification is to include the time, the location, a description of the event, the organization(s) involved in the event, and a preliminary worst case estimate of the injuries / illness and damage resulting from the event.
- c. The NASA S&MA Directorate determines and provides any additional Center-wide and NASA Headquarters notifications.
- d. KSC S&MA will notify OSHA for work-related hospitalization for inpatient care of one or more employees (provided at least one is a federal employee) within 30 workdays after the mishap and provide the following information: the establishment name, location of incident, time of incident, number of fatalities (if known), number of hospitalized employees (if known), contact person, contact person's phone number, and a brief description of the mishap. After notifying OSHA, the KSC S&MA will inform NASA Headquarters that an oral report has been provided to OSHA.

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- e. To report a work-related mishap involving death of an employee, follow 29 CFR 1904.39, Occupational Safety and Health Administration (OSHA), reporting requirements. Acknowledge all mishap notification to OSHA verbally, by e-mail, or by fax.
- f. Contractors are responsible for reporting directly to OSHA when the mishap involves contractor personnel only.

1.2.2.1 Center Director or Designee

Upon determining the mishap classification level with assistance of the S&MA Directorate for mishaps within the Center's jurisdiction, initiate the appropriate mishap notifications [i.e. report, by telephone or e-mail, to the NASA Administrator upon learning of any work-related NASA Type A, Type B or NASA High Visibility (NHV) mishap (source: NPR 8621.1)].

1.2.2.2 Safety and Mission Assurance Director or Designee

- a. Initiate the appropriate mishap notifications upon determining mishap's classification within their jurisdiction with assistance from KSC's MIPO.
- b. Report Type A, Type B, and NHV mishaps to Office of Safety and Mission Assurance (OSMA) and KSC senior management.

1.2.2.3 Chief, Institutional Division

- a. Notify OSHA in the event of a fatality or the hospitalization for inpatient care of a Federal or NASA Exchange employee.
- b. Inform KSC's PX office when there is a casualty involving a NASA employees or military and other Federal personnel, including astronauts, detailed to NASA (source: NPR 8621.1).
- c. Ensure the items listed below in the "Responsible Safety Organization" section are completed for areas under their jurisdiction.
- d. Ensure all KSC mishaps and associated corrective actions will be entered into the NMIS database, updated when changes occur (every 30 days at a minimum), and tracked to closure.

1.2.2.4 Communication and Public Engagement Director

a. With CD coordination and KSC Emergency Manager approval, disseminate to the media and the general public the appropriate preliminary information, video, and imagery relating to the mishap, including any ongoing hazards.

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b. After coordination with and authorization by the CD and NASA HQ to release, promptly announce to the public that a work-related mishap involving the death or permanent disability of a NASA employee has taken place.

1.2.2.5 Responsible / Cognizant Safety Organization

Perform the appropriate notifications based on the initial severity assessment of the incident, and determine the mishap classification level for all mishaps within their jurisdiction. Reference <u>Appendix D</u> to develop a "Mishap Quick Sheet" for what notifications should be accomplished within the first 30 minutes of a Mishap.

1.2.2.6 Mishap Investigation Program Office (KSC-led investigations)

- a. Provide support to the Center's initial incident severity assessment used to determine the mishap classification level and to make the appropriate mishap notifications.
- b. Work closely with the KSC Aviation Safety Officer on matters related to aircraft mishaps.

1.2.2.7 Human Resources Directorate

Establish requirements and procedures to provide next-of-kin notification when a mishap results a civil servant fatality.

1.3 Investigating Authority and Investigation Support Selection

For Type A, Type B, NHV, and CHV mishaps and close calls, NASA IA will be selected and supported in accordance with the requirements of NPR 8621.1 and this Plan.

1.3.1 Investigating Authority Funding

- a. The responsible organization (e.g., Center, MDAA, Program / Project, Center) provides funding and support for investigations (e.g., IA, executive secretary, failure analysis) within their programs and involving their hardware, facilities, or enabling activities (source: NPR 8621.1).
- b. Upon notification of an incident, the S&MA Business Office promptly secures a Webbased Time and Attendance Distribution System (WebTADS) charge code from the responsible organization for use by IA civil servant members and additional NASA investigation support personnel.

1.3.2 Investigating Authority

The Investigating Authority is defined as an Individual Mishap Investigator (IMI) (for a CHV), Mishap Investigation Team (MIT), or Mishap Investigation Board (MIB) appointed to conduct an investigation for NASA Type A, Type B, and High-visibility mishaps or close calls in accordance with NPR 8621.1.

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- a. Investigating Authority will have sufficient experience and technical expertise to understand the technology and management interfaces related to the mishap.
- b. Investigating Authority will be independent of the program or facility that experienced the mishap or close call.
- c. The IMI, ex officio members, and at least one voting member will have the mishap investigation training (source: NPR 8621.1).

Note: Training is required per NPR 8621.1. The KSC S&MA Training Coordinator is responsible for obtaining and scheduling these classes. It is recommended that all IA members take the computer-based SMA-RM-WBT-481-Human Reliability Analysis training in System for Administration, Training, and Educational Resources for NASA (SATERN).

1.3.3 Center Director or Designee

- a. Appoint the IA for mishaps under the Center's jurisdiction (source: NPR 8621.1).

 Note: Seek KSC SMA Director's advice concerning IA membership for Type A, Type B, and NHV mishaps and close calls with assistance from the KSC MIPO.
- b. Determine whether NASA will accept the mishap investigation and subsequent mishap report of another competent authority.
- c. Authorize a NASA investigation pursuant to <u>NPR 8621.1</u> when it is determined that a NASA contractor's / grantee's mishap report is not adequate because it failed to reach root cause(s), failed to provide recommendations that prevent recurrence, is not suitably independent, or is in some other way deficient.

1.3.4 Safety and Mission Assurance Director or Designee

- a. The S&MA Director appoints the IA (usually an IMI) for CHV with assistance from the KSC Mishap Investigation Program Office.
- b. May authorize a NASA KSC-led CHV investigation when it is determined that a NASA contractor's / grantee's mishap report is not adequate because it failed to reach root cause(s), failed to provide recommendations that prevent recurrence, is not suitably independent, or is in some other way deficient.
- c. Appoint the IA for a CHV mishap investigation.
- d. Report Type A, Type B, and NHV mishaps to OSMA and KSC senior management.
- e. Report Type CHV mishaps to KSC senior management.

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1.3.5 Chief, Institutional Division

Ensure Type A, Type B, and NHV mishaps IA membership has the necessary concurrences (source: NPR 8621.1).

1.3.6 Mishap Investigation Program Office (KSC-led investigations)

- a. Notify the S&MA Business Office to request a WebTADS charge code for IA use.
- b. Assemble the IA in coordination with KSC and NASA senior management.
- c. Determine the Chairperson and voting members of the board.
- d. Coordinate with NASA-HQ / OSMA as required by NPR 8621.1
- e. Request a civil service advisor for the board from the following NASA KSC organizations:
- (1) Chief Counsel (CC)
- (2) Communication and Public Engagement (PX)
- (3) Protective Services Office (for import / export control) (SI)
- (4) Procurement Office (OP)
- (5) Aerospace Medicine & Occupational Health (for personnel injury mishaps) (SI)
- f. Request a trained ex officio member from SA-E to the MIT or MIB to ensure that the mishap investigation process for the assigned mishap or close call is conducted properly and completely.

Note: An ex officio is not required for an IMI.

g. Prepare the necessary correspondence (tasking, appointment, and transmittal letters) for KSC NASA-led investigations to include: preparing the IA appointment correspondence, obtaining the appointing official's signature, and preparing distribution.

Note: OSMA appointed IAs (e.g., Type A, Type B, and NASA High-Visibility mishaps and close calls) are exempt from this.

- h. Serve as liaison between the IA, the CD, and KSC organizations.
- i. Work closely with the KSC ASO on matters related to aircraft mishap investigation (source: NPR 8621.1).
- j. Provide the new IA with an overview of KSC's mishap investigation process.

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1.3.7 Office of the Chief Counsel (CC)

Develop nondisclosure agreements (NDA) if the IA uses a contractor as administrative support or a consultant to analyze interview data or participate in interviews.

1.3.8 Emergency Response / Incident Commander

Provide the IA with all evidence gathered at the scene unless criminal wrongdoing is suspected.

1.3.9 Protective Services

- a. Maintain an on-the-scene security presence, as requested by the IA, to preserve evidence.
- b. Provide the IA with all evidence gathered at the scene unless criminal wrongdoing is suspected.

1.4 Mishap Investigation Process

All Type A, Type B, NHV, and CHV mishaps and close calls will be investigated by a NASA IA in accordance with the requirements of NPR 8621.1 and this document.

1.4.1 Investigating Authority

- a. The IA will conduct a comprehensive investigation within the defined scope of the appointment correspondence or appointment orders and prepare and sign a mishap report. Specific actions include:
- (1) Take the required mishap investigation training prior to reporting for duty (source: NPR 8621.1).
- (2) Visit the mishap site with other team members while complying with all safety requirements and practices.
- (3) Ensure the mishap site is photographed or digitally recorded (videotaped) as soon as possible following the mishap.
- (4) Generate and agree on interview questions.
- (5) Set up and conduct interviews.
- (6) Decide upon an approach to set the tone for interviews to optimize information gathering and to assure interviewee is as relaxed as appropriate (e.g., privileged interview statement—nondisclosure agreement (NDA) if a contractor is used for transcription—or such interview questions or drawings, models, photographs, annotated

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or labeled, that describe the scene of the mishap or close call to aid the interviewee in describing what happened).

- (7) Determine interview package content.
- (8) Ensure that the appropriate number (preferably two) of interviewers are present for interviews.
- (9) Ensure only Federal employees are present at the interview (with the exception of the interviewee).

Note: When a contractor / consultant is present during a mishap interview, they must have an NDA signed specifically to support interviews.

Note: If the interviewee requests a third party to be present during an interview, that interview is no longer privileged.

- (10) Protect evidence, documents, records, witness statements, and other artifacts by confining their use and movement to the immediate area and by placing them into a secured area (e.g., password-protected computer, lockable file cabinet) when not in use.
- (11) Protect the integrity of the investigation by not discussing it outside of a secure area and then only with members or others cleared for the activity by the chairperson.
- (12) Participate in meetings within the securable area designated as the meeting area.
- (13) Obtain procedures, training records, manufacturer's data, company policies, safety and health plans, configuration management information, employee and equipment certification information, operator logs, equipment logs, and whatever other documentation will provide insight into what may have led to the mishap or close call.
- (14) Refer to other mishap reports, NMIS entry, and publications.
- (15) Use Fault Tree Analysis as the structure analysis and the SHELLD model [software, hardware, environment (to include work-place environment), live-ware personal, live-ware others, and documentation)] to identify the root cause of the mishap's undesired outcome.
- (16) Document what information is known and identify other contributing factors in the mishap or close call equation.
- (17) Utilize available resources as appropriate (e.g., databases, consultants, OSMA staff) to better understand the investigation process and structured root cause analysis techniques.

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- b. Appoint a Federal employee to serve as evidence custodian when there is a mishap involving an injury or a fatality. The evidence custodian implements the chain-of-custody process documented in kww.ksc.prices.custodian implements the chain-of-custodian implements and chain of custodian implements and chain of custodian implements are considered in the content of custodian implements are considered in the content of custodian implements are content of custodian implements and custodian implements are custodian implements are custodian implements are custodian implements.
- c. Release impounded data, records, equipment, facilities, and the mishap site when they are no longer needed by the IA (source: NPR 8621.1).

Note: Do not release data and records that support the investigation unless copies of the documents are made and retained with mishap investigation records.

- d. Manage and coordinate all aspects of the mishap investigation, including, but not limited to, the following tasks: assigning group leaders; setting up witness interviews; assigning a board co-chair, keeping the IA focused and on track for conducting the investigation, assessing the work pace for the IA versus the schedule with consideration to the morale and endurance of the members.
- e. Coordinate with the appointed mishap advisors throughout the investigation.
- f. Refer allegations and evidence of criminal activity that are identified in the course of an investigation to the Office of Inspector General (source: NPR 8621.1).
- g. Report only to the AO (or designee) during the investigation.
- h. Work closely with the MIPO to guide the IA throughout the mishap investigation.

1.4.2 Ex Officio Member

- a. Serve as the nonvoting, authorized representative of the AO having jurisdiction over the mishap.
- b. Ensure the investigation is conducted in conformance with NASA policy, <u>NPR 8621.1</u>, and applicable Center directives and plans.
- c. May participate in the investigation proceedings and deliberations as he / she deems appropriate (source: NPR 8621.1).
- d. Ensure the report contains robust supporting evidence that justifies the findings and associated recommendations.

1.4.3 KSC Organizational Director

- a. Provide personnel to serve as IA members, advisors, or consultants, as requested by the CD or S&MA Director.
- b. Provide an IA meeting room when identified, upon request, as the RO.

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c. Provide technical expertise support to the mishap IA.

1.4.4 Safety and Mission Assurance Director

Approve or reject the Type B mishaps, NHV, and CHV IA request for additional time to complete the mishap investigation.

1.4.5 Export Control Advisor

- a. Make determinations about the sensitivity of the subject matter and provides information to the appointing official regarding what can release to the public regarding the event.
- b. Review IA reports to identify International Traffic in Arms Regulations (ITAR) and Export Administration Regulations (EAR) information within the mishap report.

1.4.6 Legal Advisor

- a. Provide NDA if the IA uses the services of a contractor as administrative support or as a consultant.
- b. Attend interviews if the interviewee is accompanied by a lawyer during the interview process.
- c. May review witness statements and testimony in order to provide adequate legal guidance.
- d. Conduct IA ethics training, if needed.

1.4.7 Communication and Public Engagement Advisor

Coordinate with the Chair, Center Director or Designee, and Export Control Officer (as required) about content regarding the investigation that is to be released to the public throughout and following the investigation.

1.4.8 Procurement / Contracting Advisor

- a. Review contracts and historical performance of contractors.
- b. Make determinations of contract violations, deviations, and oversights for preventing recurrence.
- c. Recommend changes to existing contracts and generic contract wording in accordance with the corrective action plan.
- d. Coordinate with KSC contractors and subcontractors to assist the IA in gaining access to contractor sites, impounding contractor data, and interviewing contractor personnel as permitted by the contract.

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1.4.9 Center Medical Advisor

- a. A medical advisor is assigned to the IA for all injury / illness-related mishap investigations.
- b. Provide medical input on the implication of an individual's physical and mental health and well-being for the event being investigated.
- c. Provide support for evaluating drug test results and interpreting medical policy concerning drug testing.
- d. Evaluate the response of the KSC Medical Services to the incident.
- e. Evaluate whether any injuries sustained matches the IA's proposed scenario.
- f. Interface with outside medical authorities.

Note: Due to privacy laws, this may not be possible without the consent of the injured individual.

1.4.10 Information Technology and Communications Services Director

Provide IT resources for the IA (e.g., audio visual, secure data location).

1.4.11 Consultants (Nonfederal employee)

- a. Sign an NDA.
- b. Provide subject matter expertise and advice to the IA.
- c. May perform analyses.
- d. Assist in formulating conclusions as requested.

Note: Consultants are prohibited from the following activities in support of the IA: participation in deliberations (vote on findings); signing the mishap report; and reading, listening to, or participating in witness interviews unless they are tasked to analyze interviews and they have signed a nondisclosure agreement authorized by the NASA Office of the General Counsel or Center Chief Counsel.

1.4.12 Mishap Investigation Program Office

- a. In coordination with the IA legal advisor, verify that IA members do not have any potential personal, work, or financial conflict.
- b. Set completion suspense dates for Center mishap process.

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- c. Assist the IA throughout the mishap investigation process.
- d. Arrange for the IA administrative and logistical support.
- e. Review the IA's draft report, the recommendations, and out-brief.
- f. Ensure mishap information in NMIS gets updated.

1.4.13 Chief, Institutional Division

Resolves IA issues at the lowest level on behalf of the AO.

1.5 Mishap Investigation Report

The mishap reports will be written to satisfy NPR 8621.1, this Plan, and the NASA Root Cause Analysis Tool (RCAT) requirements. Consult the MIPO for assistance.

1.5.1 Mishap Investigation Program Office

- a. Upon request, support the development of the mishap report.
- b. Determine the appropriate preliminary review process and the reviewing offices that should participate in the preliminary review.
- c. Review the IA's draft report, the recommendations, and out-brief.
- d. Schedule a briefing with the AO and the organization assigned to be the CAP point of contact (POC).
- e. Work with the NASA Safety Center (NSC) and NASA Headquarters (HQ) to ensure NASA HQ mishap requirements are satisfied (Exception: CHV incidents).
- f. Resolve conflicting endorsements / comments.
- g. Schedule and conduct the mishap report endorsement process as identified in NPR 8621.1 and this Plan.
- h. Reconcile the mishap endorsements during CAP development.
- i. Ensure mishap reports are endorsed, approved, and authorized for Center release, as appropriate.
- j. Generate monthly Type B and NHV KSC-led mishap investigation status reports as needed for the CD.

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1.5.2 Mishap Preliminary Report Review Process

- a. The preliminary review occurs within the time allocated for the completion of the mishap investigation.
- b. IA will provide a draft mishap report to the MIPO and request a preliminary review.
- c. Upon receipt of a draft mishap report, the MIPO will determine the appropriate preliminary review process and reviewing offices that should participate in the preliminary review. The reviewing offices will review the draft mishap report and provide feedback to the IA within 15 days.
- d. Institutional Division AO or Designee (dependent on level of investigation) reviews the IA's report for accuracy, completeness, and recommendation practicality, feasibility, and achievability, as appropriate.
- e. Feedback from reviewers may include but is not limited to requests for clarification; additional facts; further root cause analysis (or other analysis); feasibility evaluation of recommendations; compliance with NPR; and / or removal (or placement in a non-releasable appendix) of privileged or proprietary information, International Traffic in Arms Regulations (ITAR) information, Export Administration Regulations (EAR) information, material subject to the Privacy Act, or other inappropriate information (e.g., witness names).

Note: Except for the removal of all personal identifiable references, the chairperson and the IA are not required to make any changes to the mishap report with which they do not agree.

1.5.3 Mishap Report Signing

- a. IA advisor(s) review and sign the mishap report demonstrating that it meets NASA policies and procedures in their functional area and is ready for Center release.
- b. IA and ex officio members will sign the mishap report investigation verifying the investigation was conducted in conformance with NASA policy (source: NPR 8621.1).

Note: If an ex officio member believes that the mishap report is not complete, does not address the facts, did not determine the root cause, and / or violated NPR 8621.1, the ex officio member will describe the mishap report's deficiencies in writing and sign and attach this description to the mishap report in lieu of signing the report.

1.5.4 Mishap Report Endorsement

- a. The signed Type A, Type B, and NASA High-visibility mishaps and close call reports are delivered to the appropriate endorsing officials (source: NPR 8621.1).
- b. The signed CHV mishaps report endorsing officials are the AO and the responsible organization(s) as determined by the AO.

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c. The endorsing official or designee reviews the mishap investigation report and provides an official correspondence or endorsement correspondence containing comments and a recommendation as to whether the mishap report should be approved or rejected to the AO or Designee.

Note: Endorsement officials have five (5) day to provide comment back to the IA (source: NPR 8621.1).

- d. The Mishap AO endorses mishap and close call reports. Verifying, at a minimum, the following:
- (1) The mishap report content is technically accurate and complete and there are adequate facts to substantiate the findings.
- (2) Proper analysis techniques were selected, implemented, and completed correctly.
- (3) The mishap report adequately describes proximate cause(s), root cause(s), and contributing factor(s).
- (4) Recommendations are associated with (traceable to) at least one significant finding and are practical, feasible, achievable, and will prevent recurrence of similar mishaps or close calls.
- (5) Proprietary information, material subject to the Privacy Act, or privileged information that should not be released has been identified and protected.

Note: If these items have not been accomplished, the AO may reject the mishap report, request additional information.

e. Endorsement and any comments will be attached to the mishap report and become part of the permanent record.

1.5.5 Final Mishap Investigation Report Approval

- a. Upon conclusion of the out brief and receipt of the signed mishap report, the AO informs the IA that the mishap report fulfills the requirements of the appointment correspondence and that they are released from duty.
- b. The AO reviews the Final Mishap Investigation Report, endorsements, and comments and determine if the report is approved or rejected within (5) five workdays.
- c. If the AO rejects the Final Mishap Investigation Report, a written description of the deficiencies that warrant the rejection will be attached to the mishap report for records retention. The IA may charter a new investigation.

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Note: As a matter of education and continuity, feedback will be provided to the released IA.

1.5.6 Mishap Report Release

- a. Incidental to a Freedom of Information Act (FOIA) request, Type A, Type B, and NHV mishap and close call reports will be reviewed by NASA HQ.
- b. The following offices review Type B, NHV, and CVH mishap and close calls reports for Center Release and send a concurrence or non-concurrence response to the MIPO.

Incident Classification	Center Release Review & Authorization
Type B, NHV, and CHV	Center Export Control (SI), Chief Counsel (CC),
Mishap and Close Call	Communication and Public Engagement (PX),
	Procurement (OP), and Protective Services, if required
	for classified information

Note: If the Center Release response in a non-concurrence include identified areas of concern with the response.

c. Once all release approvals are received, Institutional Division will distribute final approved report.

1.6 Post-Investigation Activities

1.6.1 Appointing Official or Designee

- a. Directs the responsible center, contractor, grantee or organization (to the lowest level) is responsible to develop the corrective action plan (CAP) and ensure the CAP process is completed (source: NPR 8621.1).
- b. May extend the CAP deadline upon request from the RO.

1.6.2 Responsible Organization for CAP Development

Assign a CAP POC.

1.6.3 **CAP POC**

- a. Track and monitor CAP development and implementation through the CAP Verification process in NMIS.
- b. Review of any process / project changes required based on corrective actions.
- c. Develop an initial CAP using the IA Findings, Observations, and Recommendations.
- d. Submit the CAP to the S&MA Director or Designee within 21 workdays from being tasked unless an extension is granted.

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- e. Provide CAP status updates to the MIPO at least every 30 days.
- f. Modify and finalize the CAP using the recommendations approved by the AO or designee after endorsement reconciliation.

1.6.4 Mishap Investigation Program Office

- a. Assist the Responsible Organization with CAP development upon request.
- b. Ensure NMIS is updated at least every 30 days.
- c. Schedule a briefing with the AO and the organization assigned to be the CAP POC, as necessary.
- d. Work with the NASA Safety Center (NSC) and NASA HQ to ensure mishap requirements are satisfied, as necessary.
- e. Work with KSC Responsible Organization to ensure the mishap CAP is coordinated, developed, and completed.

1.6.5 CAP Review and Approval - Safety and Mission Assurance Director or Designee

- a. May provide the CAP to the IA, applicable safety organization, and other selected offices as is deemed appropriate for review.
- b. Accept or reject the CAP based on the results of these reviews and his / her own review.
- c. Provide comments with any rejected CAP returned to the responsible organization for revision and resubmission.
- d. Determine the timeframe for resubmission of the CAP.
- e. Assess and, if warranted and desired, approve any changes to the CAP.
- f. May rely on the MIPO to resolve ambiguous, incomplete, conflicting, or unachievable recommended actions / concerns / comments.
- g. Send change approval to the responsible organization and MIPO.

1.6.6 CAP Implementation - Responsible Organization

a. Implement the corrective actions as documented in the approved CAP.

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- b. Provide estimated completion date (ECD) for those corrective actions that remain open.
- c. Track the corrective action performance in NMIS, and inform the AO or designee of the status of the corrective actions at intervals not exceed 30 calendar days.

Note: Assistance is available from the Institutional Division NMIS Administrator.

- d. Submit proposed changes to the CAP to the S&MA Director or MIPO for approval, similar to the process used for the original plan approval.
- e. Maintain a complete package of corrective action documentation to facilitate corrective action verification.
- f. Enter into NMIS the actual direct cost of the mishap or, if the actual direct cost is not available, the estimate of the direct cost of the mishap.

1.6.7 Monitor and Close Out of the CAP

1.6.7.1 Chief of Institutional Division or Designee

- a. Monitor the corrective action activities in NMIS and inform the AO or designee of the status of the corrective actions at intervals not exceed 30 calendar days.
- b. Verify that the CAP has been implemented and is place.
- c. Assign mishap investigation corrective action verification to an individual within the Institutional Division.
- d. Ensure that all actions are correctly recorded in NMIS.

1.6.7.2 Mishap Investigation Program Office

- a. Facilitate the mishap investigation CAP verification.
- b. Verify all elements of the investigation have been completed.

1.6.7.3 Safety and Mission Assurance Director or Designee

- a. Sign a CAP closure statement when the corrective actions are closed and verified.
- b. Provide the CAP closure statement to MIPO to include as part of the mishap records.

1.6.8 Disposition and Submittal of Lessons Learned

1.6.8.1 Appointing Official or Designee

Ensure transmittal of applicable lessons learned documentation to the Lessons Learned Program Manager for lessons learned development (source: NPR 8621.1).

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1.6.8.2 Mishap Investigation Program Office

Transmit the mishap reports Executive Summary to the LLIS Program Manager for lessons learned development.

1.6.8.3 LLIS Program Manager

Develop and approve lessons learned per LLIS program requirements.

1.6.9 Conclude Mishap Activities

1.6.9.1 Safety and Mission Assurance Director or Designee

- a. Sign the mishap activities completion statement indicating:
- (1) The investigation was performed.
- (2) The CAP was developed, implemented, and closed.
- (3) The corrective actions were verified.
- b. Distribute the mishap activities completion statement to the appropriate organizations.

Note: Once the MIPO receives a mishap activities completion statement and it is distributed, the duties of the AO and S&MA Director are concluded and the mishap file is closed.

1.6.9.2 Record and Evidence Retention

- a. The approved and released mishap report, the final CAP, and other applicable documentation will be filed within the controlled offices of Institutional Division.
- b. NASA medical reports and witness statements are excluded from a mishap report, but retained, marked confidential and privileged, and filed with the official, approved mishap report.
- c. The final CAP, witness statements, and other records documenting the investigation are managed and secure (source: NPR 8621.1).

Note: Such records, regardless of format, include but are not limited to mishap reports and associated records; relevant notes and e-mail messages of the IRT and investigation authority; meeting agendas, minutes, and other documentation of the investigation process; and copies of all data and records that are used in evaluation and analysis of the mishap.

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1.6.9.3 Mishap Investigation Program Office

- a. Maintain KSC mishap files in accordance with NPR 1441.1 and physical evidence (debris) as necessary (source: NPR 8621.1)
- b. Attach the final center released mishap report to the NMIS case, to include the endorsement approvals, signed mishap report, minority reports (if any), and the approved CAP.

1.6.9.4 Safety and Mission Assurance Director

Provide a secure storage area, and retain mishap investigation records.

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CHAPTER 2: AVIATION SAFETY

2.1 Readiness to Conduct Investigations

2.1.1 Center Director or Designee

Ensure the development of a Mishap Preparedness and Contingency Plan involving aircraft under the CD's jurisdiction.

2.1.2 Aviation Safety Officer

- a. Follow NPR 7900.3 and NPR 8621.1 for aviation related incidents.
- b. Work closely with and coordinate the KSC Aircraft Mishap Preparedness and Contingency Plan (MPCP) with the Mishap Investigation Program Office.
- c. Conduct appropriate awareness and training activities to ensure that the Center's employees are familiar with their responsibilities in the event of an aircraft mishap.
- d. Develop and maintain an Aircraft Mishap Interim Response Team (IRT), plans / procedures / kits for aircraft mishaps.
- e. Develop a plan to addresses procedures for mishaps away from home field.
- f. Take steps to effectively communicate and coordinate the Aircraft MPCP with the necessary parties (e.g. MIPO).
- g. Ensure Aircraft Mishap IRT members take all training necessary to safely perform IRT duties (e.g., personal protection equipment, bloodborne pathogen). Minimum IRT training is identified in NPR 8621.1.

Note: In order to qualify for IRT membership, personnel must have completed the necessary training.

- h. Ensure the IRT is aware of and prepared for known hazards at the aircraft mishap site.
- i. Perform a tabletop review, simulation, or exercise using a realistic mishap scenario to include mishap response annually (source: NPR 7900.3).
- j. At the conclusion of the tabletop review, simulation, or exercise, identify any deficiencies in the Aircraft MPCP and the Center's MPCP. Update the plan(s) as needed.

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2.2 Mishap Response, Notification, and Classification

2.2.1 Mishap Response

2.2.1.1 Aviation Safety Officer

- a. Deploy to the aircraft mishap site to lead the Aircraft Mishap IRT.
- b. Coordinate deployment of the Aircraft Mishap IRT, as necessary.
- c. Tailor the Aircraft Mishap IRT procedures and kits to accommodate a variety of potential aircraft mishap scenarios.
- d. For aircraft mishaps that occur off-Center, the ASO and the Aircraft Mishap IRT members:
- (1) Work with local authorities to secure the site, preserve evidence, and gather information.
- (2) Support the local on-scene commander until the site can be transferred to the Investigating Authority.
- (3) Collaborate with KSC organizations to provide additional Security, Transportation, Helicopter support, etc.

2.2.1.2 Emergency Response / Incident Commander

- a. Secure evidence gathered at the scene until it can be provided to the IA with all unless criminal wrongdoing is suspected. Implement the procedures outlined in KNPR 8715.2, Comprehensive Emergency Management Plan.
- b. Relinquish site command to the IRT in coordination with Protective Services after completion of all rescue efforts and it is determined that there is no evidence of criminal wrongdoing.
- c. Secure evidence gathered at the scene until it can be provided to the IA, unless criminal wrongdoing is suspected.

2.2.1.3 Protective Services

- a. Assist the IC in securing the mishap site to preserve evidence.
- b. Determine if a security investigation is warranted due to any evidence of criminal wrongdoing, if not relinquish site command to the IRT.
- c. Provide an on-the-scene security presence, as requested by the IRT, to preserve evidence. In such an instance, Protective Services personnel can only be released by

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the investigating authority (FAA, NTSB, or NASA) or the ASO with coordination with the Center's MIPO.

2.2.1.4 Aircraft Mishap Interim Response Team

In order to qualify for IRT membership, at a minimum, personnel must have completed the necessary IRT training as identified in NPR 8621.1, the Center's MPCP and the KSC Aircraft MPCP.

Note: The IRT consists of two or more safety personnel, at least one being a Federal employee. The team is activated when notification is received of a potentially serious or high-visibility mishap or close call.

Note: Cognizant Safety Organizations and the ASO maintain a list of personnel who are qualified to serve as IRT members within their organizations.

a. Immediately deploy to the mishap site when directed.

Note: The Aircraft Mishap IRT may request assistance from the S&MA Institutional Division.

- b. Support the response until a mishap classification determination can be made.
- c. Assist the Incident Commander (IC) as requested.
- d. Take control of the mishap site once the IC clears and releases the mishap site.
- e. Take all necessary steps to preserve evidence.
- f. Document the scene through the use of photographs and sketches.
- g. Identify witnesses and collects witness statements using the NASA KSC Close Call / Mishap Witness Statement, KSC Form 50-285.
- (1) Witness statements should be taken by civil service members of the IRT within the first 24 hours of the incident.
- (2) Witness statements are to be collected and secured by a federal employee member of the IRT (source: NPR 8621.1).

Note: NASA KSC Close Call / Mishap Witness Statement are considered privileged and must be properly protected and secured (source: NPR 8621.1).

h. Contact Contracting Officer (CO) or Contracting Officer Representative (COR), if necessary, to requesting permission to stop the Contractor's work and impound materials to perform an investigation.

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- i. Secure and collect mishap evidence, (e.g., debris and material) that could be damaged or lost due to exposure to weather or environmental conditions.
- j. Implement data impoundment actions in accordance with <u>KDP-KSC-P-3612</u>, the Impoundment and Chain of Custody procedure.
- k. Advise the involved employees' supervisor(s) of alcohol and drug testing.
 - Note: Civil service employees will be tested in accordance with NPR 3792.1, NASA Plan for a Drug-Free Workplace. Contractor employees will be tested in accordance with the provisions of the applicable legal agreement(s).
- I. Provide the ASO, MIPO, or IA with all evidence secured and gathered at the scene, all data pertaining to the investigation (including impounded records and witness statements), a status of impounded records / equipment, and a description of the actions taken.
- m. Notify PX about casualties, damages, and any potential hazards to the public.
- n. Relinquish mishap site command to one of the following the IA (FAA, NTSB, or NASA) chairperson, ASO, or the MIPO.

2.2.2 Mishap / Close Call Classification and Notification

2.2.2.1 Aviation Safety Officer

- a. Make the appropriate mishap notifications (e.g., NASA HQ, KSC, NTSB, FAA).
- b. For a NASA mishap within their jurisdiction, determine the initial mishap classification level with the coordination of the MIPO and make the appropriate Agency and Center notifications.
- c. All aviation-related mishaps and associated corrective actions will be entered into the NMIS database, updated when changes occur (every 30 days at a minimum), and tracked to closure.

2.2.2.2 Center Director or Designee

Report by telephone or e-mail to the Administrator upon learning of any work-related NASA Type A, Type B, and NHV mishap (source: NPR 8621.1).

2.2.2.3 Mishap Investigation Program Office (for KSC investigations)

- a. Work closely with the KSC ASO on matters related to aircraft mishaps.
- b. Assist CD or Designee to determine aviation-related mishap classifications levels, within their jurisdiction.

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2.3 Investigating Authority and Investigation Support Selection

2.3.1 Investigating Authority Funding

- a. Funding is provided by the Federal agency performing the investigation (e.g., NASA, NTSB, FAA).
- b. The RO (e.g., MDAA, Program / Project, Center) provides funding and support for NASA-led investigations (e.g., IA, executive secretary, failure analysis) within their programs and involving their hardware, facilities, or enabling activities (source: NPR 8621.1).
- c. For NASA-led investigations, upon notification of an incident, the S&MA Business Office promptly secures a WebTADS charge code from the RO for use by IA civil servant members and additional NASA personnel as necessary to support the investigation.

2.3.2 Investigating Authority

- a. Federal Agency investigations will be accomplished with in their applicable guidelines.
- b. NASA may choose to be party to another federal agency's investigation through a memorandum of understanding.
- c. Establish an NASA IA in accordance with NPR 8621.1 and this Plan.
- d. Will have sufficient experience and technical expertise to understand the technology and management interfaces related to the mishap.
- e. Will be independent of the NASA program or facility that experienced the mishap or close call.

Note: A NASA IA may consist of an Individual Mishap Investigator (IMI) (for a CHV mishap or close call.) For NASA Type A, Type B and NHV mishaps or close calls a Mishap Investigation Team (MIT), or Mishap Investigation Board (MIB) is appointed to conduct an investigation.

2.3.3 Investigating Authority Training (for NASA led investigations)

IMI, ex officio members, and at least one voting member of each IA will have the mishap investigation training (source: NPR 8621.1).

Note: It is recommended that all IA members take the computer-based SMA-RM-WBT 481 Human Reliability Analysis training in SATERN.

Note: Training is required per NPR 8621.1. The KSC S&MA Training Coordinator is responsible for obtaining and scheduling these classes.

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2.3.4 Mishap Investigation Program Office (for NASA led investigations)

- a. Request a WebTADS charge code from the S&MA Business Office.
- b. Assemble an aviation-knowledgeable IA in coordination with the ASO and KSC and NASA senior management:
- (1) Determine the Chairperson and voting members of the board.
- (2) Coordinate with NASA-HQ / OSMA as required by NPR 8621.1
- (3) Request a civil service advisor for the board from the following NASA KSC organizations, as necessary:
- (a) Chief Counsel (CC)
- (b) Communication and Public Engagement (PX)
- (c) Protective Services Office (for import / export control) (SI)
- (d) Procurement Office (OP)
- (e) Aerospace Medicine & Occupational Health (for personnel injury mishaps) (SI)
- (4) Request an ex officio member to the MIT or MIB to ensure that the mishap investigation process is conducted properly and completely.

Note: An ex officio is not required for IMI.

c. For NASA-led investigations only, prepare and coordinate the necessary mishap correspondence (tasking, appointment, and transmittal letters) to include preparation of the IA appointment correspondence, obtaining the appointing official's signature, and correspondence distribution.

2.3.5 Center Director or Designee

a. Appoint the mishap IA for mishaps under the Center's jurisdiction (source: NPR 8621.1).

Note: Seek KSC SMA Director's advice concerning IA membership for Type A, Type B, and NHV mishaps and close calls with assistance from the KSC MIPO.

- b. Determine whether NASA will accept the investigation and subsequent mishap report of another competent authority that may have jurisdiction.
- c. Authorize a NASA investigation for mishaps under the Center's jurisdiction pursuant to NPR 8621.1, when it is determined that a NASA contractor's / grantee's mishap report

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is not adequate because it failed to reach root cause(s), failed to provide recommendations that prevent recurrence, is not suitably independent, or is in some other way deficient.

2.3.6 Safety and Mission Assurance Director or Designee

- a. Seek the advice of KSC's MIPO concerning IA membership for CHV mishaps and close calls.
- b. Appoint the IA for a CHV mishap investigation.

2.3.7 Mishap Investigation Program Office (KSC NASA-led investigations)

- a. Serve as liaison between the IA, the CD, ASO, and KSC organizations.
- b. Work closely with the KSC ASO on matters related to aircraft mishap investigation (source: NPR 8621.1).
- c. May participate in KSC aviation mishap simulations / exercises.
- d. Provide the KSC IA with an overview of KSC's mishap investigation process.

2.3.8 Office of the Chief Counsel (NASA mishaps only)

- a. Develop NDA if the IA uses a contractor as administrative support.
- b. Develop NDA prior to, the IA using a consultant to analyze interview data or participate in interviews.

2.3.9 Protective Services

Provide the IA with all evidence gathered at the scene unless criminal wrongdoing is suspected.

2.3.10 Emergency Response / Incident Commander

Provide the IA with all evidence gathered at the scene unless criminal wrongdoing is suspected.

2.4 Mishap Investigation Process

- a. NASA mishaps and close calls will be investigated in accordance with the requirements of NPR 8621.1 and Center requirements.
- b. Mishap investigations process performed by other Federal Agency will be accomplished using the applicable policies and requirements.

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2.5 Mishap Investigation Report

NASA mishap investigation report is to be written to satisfy NPR 8621.1, the NASA Root Cause Analysis Tool (RCAT) and this Plan (Consult the MIPO for best results).

2.6 Post-Investigation Activities

2.6.1 Corrective Action Plan Development

Corrective actions are to be implemented to answer the findings and observations as specified in the aviation mishap report. The RO (e.g., Center, contractor, grantee) (to the lowest level) is to develop, implement, and ensure the CAP process is completed per NPR 8621.1 and this Plan.

2.6.2 Responsible Organization

- a. Assign a corrective action POC.
- b. Review and update any process / project changes required based on corrective actions.
- c. Develop a CAP using the IA Findings, Observations, and Recommendations.
- d. Monitor corrective action activities to determine if they were carried out according to the CAP.
- e. Verify that the CAP has been implemented and is place.
- f. Ensure NMIS is updated with the actual direct cost of the mishap or, if the actual direct cost is not available, the estimate of the direct cost of the mishap.
- g. Verify that all corrective actions are recorded in NMIS.
- h. Update NMIS at least every 30 days with the current mishap / CAP status.
- i. Provide the information necessary to develop a Lessons Learned to the LLIS Program.

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CHAPTER 3: CIVIL SERVICE TYPE C AND TYPE D MISHAPS AND CLOSE CALLS

All mishaps involving injury or illness to a CS will be reported to (867-7233) 7-SAFE and investigated.

3.1 Readiness to Conduct Investigations

3.1.1 Chief, Institutional Division

- a. a. Establish, provide and maintain a IRT capability that meets the requirements of NPR 8621.1.
- b. Maintain enough trained Institutional Safety professionals to serve as an IA members to perform work-related CS mishap / close call investigations (source: NPR 8621.1).

3.1.2 Responsible / Cognizant Safety Organization

- a Conduct appropriate awareness training (i.e. potential hazards, any changes in configuration) and applicable MPCP familiarization training to ensure that the Organization's employees are familiar with their responsibilities in the event of a work-related injury / illness.
- b. Ensure the responsible organization's MPCP, Center, or Program / Project contains the necessary information for the IRT to respond safely and to secure mishap scenes.
- c. Ensure IRT members take all training necessary to safely perform IRT duties (e.g., personal protection equipment, bloodborne pathogen) and the IRT training identified in NPR 8621.1.

3.1.3 Interim Response Team

Become familiar with the Center's MPCP and the MPCP of Program / Project with activities at KSC.

3.2 Mishap Response, Notification, and Classification

3.2.1 Mishap Response

3.2.1.1 Employee

- a. Immediately take all necessary steps to protect themselves and fellow employees.
- b. Cease work following any unplanned incident, even if there are no apparent injuries / damage.
- c. Report all accidents involving injury to people or property damage to 911 or 867-7911 by cell phone or 853-0911 from CCAFS.

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Note: The processing of Initial Record of Injury / Illness Forms (<u>KSC Form 6-2</u>) (KSC Form 6-2) is processed in accordance with <u>KNPD 1810.1</u>, KSC OCCUPATIONAL MEDICINE PROGRAM.

- d. Secure the scene and do not allow access until released by the appropriate safety official.
- e. Report for medical evaluation and treatment to the Occupational Health Facility (OHF) or, if not located at KSC, to a licensed health care provider for personnel exposure, or suspected exposure, to a hazardous substance exceeding allowable limits (quantity level or exposure time).
- f. Report confirmed exposures exceeding allowable limits as a mishap or close call.

3.2.1.2 Employee's Supervisor

- a. Once the Supervisor's Corrective Action block has been answered, forward the completed Initial Record of Injury / Illness Forms (KSC Form 6-2) to the MIPO.
- b. Notify Institutional Division when a mishap or close call occurs at 867-SAFE (867-7233) and the appropriate level of management.
- c. After the initial notifications are made, provide any necessary assistance to safe the mishap site until the emergency response, security, or safety arrives.
- d. Support the IC, Protective Services, and Safety personnel as they safe the mishap site.
- e. Initiate drug testing for civil servants involved in a mishap that results in a fatality or personal injury requiring immediate hospitalization or in damage estimated to be in excess of \$10,000 to Government or private property.
- f. All on-site incidents involving Government property damage in excess of \$5,000 (excluding government owned vehicle damage less than \$20,000), will be reported to Institutional Safety.

3.2.1.3 Emergency Response / Incident Commander

- a. Relinquish site command to the IRT after completion of all rescue efforts and the determination that there is no evidence of criminal wrongdoing.
- b. Provide the MIPO with all evidence gathered at the scene unless criminal wrongdoing is suspected.

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3.2.1.4 Protective Services

- a. Determine if a security investigation is warranted due to any evidence of criminal wrongdoing.
- b. Provide the IA with all evidence gathered at the scene unless criminal wrongdoing is suspected.

3.2.1.5 Cognizant Interim Response Team

a. Immediately deploy to the mishap site when directed and be prepared to initiate the RO and Center MPCP.

Note: The IRT must have completed the necessary training and should consists of two or more safety personnel, at least one must be a federal employee. The team is activated when notification is received of a potentially serious or high-visibility mishap or close call. Safety Organizations maintains a list of personnel who are qualified to serve as IRT members.

- b. Assist the Incident Commander (IC).
- c. Take all necessary steps to preserve evidence.
- d. Document the scene through the use of photographs and sketches.
- e. Identify witnesses and collect witness statements using the NASA KSC Close Call / Mishap Witness Statement, KSC Form 50-285.
- (1) Witness statements are to be taken by civil service members of the IRT within the first 24 hours of the incident.
- (2) Witness statements are to be collected and secured by civil service members of the IRT.

Note: Witness statements are considered privileged and must be properly protected and secured.

- f. Contact the Contracting Officer (CO) or Contracting Officer Representative (COR) if necessary to requesting permission to stop the work and impound materials necessary to perform an investigation.
- g. Collect and secure mishap evidence (e.g., debris and material) that could be damaged or lost due to exposure to weather or environmental conditions.
- h. Implement data impoundment actions in accordance with <u>KDP-KSC-P-3612</u>, the Impoundment and Chain of Custody procedure.

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i. Advise the involved employee's supervisor concerning NASA's drug and alcohol testing requirements.

Note: Civil service employees will be tested in accordance with NPR 3792.1, NASA Plan for a Drug-Free Workplace. Contractor employees will be tested in accordance with the provisions of the applicable legal agreement(s).

- j. Provide the assigned IA or MIPO with all evidence gathered at the scene, all data pertaining to the investigation (including impounded records and witness statements), a status of impounded records / equipment, and a description of the actions taken.
- k. Relinquish site command to one of the following the assigned IA or the MIPO.

3.2.1.6 Chief, Institutional Division

Ensures all reported on-site incidents involving Government property damage in excess of \$5,000 (excluding government owned vehicle damage less than \$20,000), are recorded into NMIS with the classification of "non 8621 reportable".

3.2.2 Mishap / Close Call Classification and Notification

Mishap notification is accomplished in accordance with <u>KSC-PLN-2807-Notification</u>, Mishap Notification Requirements.

In order to facilitate the timely investigation and other notification requirements of NPR 8621.1, the responsible Civil Service or program / project or directorate organization will immediately (within one hour) provide initial notification by telephone (867-7233), email, or in person to KSC Institutional Division. Initial notification is to include the time, the location, a description of the event, the organization(s) involved in the event, and a preliminary worst case estimate of the injuries / illness and damage resulting from the event.

Note: The KSC S&MA Directorate may provide any additional notifications.

KSC S&MA will notify OSHA for work-related hospitalization for inpatient care of one or more employees (provided at least one is a Federal employee) within 30 workdays after the mishap and provide the following information: the establishment name, location of incident, time of incident, number of fatalities (if known), number of hospitalized employees (if known), contact person, contact person's phone number, and a brief description of the mishap. After notifying OSHA, the KSC S&MA will inform NASA Headquarters that an oral report has been provided to OSHA.

3.2.2.1 Responsible / Cognizant Safety Organization

a. Perform the appropriate notifications based on the initial severity assessment of the incident.

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- b. All mishaps and associated corrective actions will be entered into the NMIS database, updated when changes occur (every 30 days at a minimum), and tracked to closure.
- c. Perform the appropriate notifications to the MIPO based on the initial severity assessment of the incident.
- d. Support the MIPO in determining the mishap classification level.

3.2.2.2 Mishap Investigation Program Office

- a. Provide support to assess the initial incident severity, determine the mishap classification level and make the appropriate notifications.
- b. Work closely with the KSC ASO on aviation work-related mishaps resulting in a CS injury / illness.

3.3 Investigating Authority and Investigation Support Selection

3.3.1 Investigating Authority Funding

- a. The RO providing direct supervision of the activity (e.g., MDAA, Program / Project, Center) provides funding and support for investigations (e.g., IA, executive secretary, failure analysis) within their programs and involving their personnel, hardware, facilities, or enabling activities (source: NPR 8621.1).
- b. Upon notification of an incident, the S&MA Business Office promptly secures a WebTADS charge code from the RO for use by the mishap IA members and additional civil servant personnel necessary to support the investigation.

3.3.2 Chief, Institutional Division

- a. Appoint an IA (Institutional Safety Professional) trained to investigate the mishap, determine root cause and develop corrective action(s) to prevent reoccurrence or similar mishap occurrence (source: NPR 8621.1).
- b. IA should have sufficient experience and technical expertise to understand the technology and management interfaces related to the mishap.
- c. IA is independent of the program or facility that experienced the mishap or close call.

3.3.3 Investigating Authority

IA will have the mishap investigation training specified in NPR 8621.1.

Note: It is recommended that all IA members take the computer-based SMA-RM-WBT 481- Human Reliability Analysis training in SATERN. The KSC S&MA Training Coordinator is responsible for obtaining and scheduling these classes.

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3.3.4 Employee's Supervisor

Follow KNPD 1810.1 to properly complete and maintain the KSC Form 6-2.

3.3.5 Employee

Follow KNPD 1810.1 to complete KSC Form 6-2.

3.4 Mishap Investigation Process

All CS mishaps involving injury or illness will be investigated in accordance with NPR 8621.1 and Center requirements.

3.4.1 Chief, Institutional Division

- a. Ensure CS mishaps are investigated per NPR 8621.1 and Center requirements.
- b. Ensure required mishap investigation data including corrective actions are entered into the NMIS database (source: NPR 8621.1).

Note: Illness investigations are to be accomplished by the Center's Aero Medicine and Occupational Branch (SI).

3.4.2 Investigating Authority

- a. Report only to the MIPO or CID during the investigation.
- b. Retake the required mishap investigation training in SATERN, as necessary.
- c. Perform a thorough mishap investigation to prevent mishap reoccurrence or similar occurrence of a similar mishap

Note: An Individual Mishap Investigator (IMI) may be used to investigate CS Type C, Type D and close call mishaps.

- d. Serve as evidence custodian when there is a mishap involving an injury. The evidence custodian will implement the chain-of-custody process documented in KDP-KSC-P-3612, the Impoundment and Chain of Custody procedure to provide physical security over and controlled access to the injured personal effects and related sensitive material.
- e. Perform and coordinate all aspects of the mishap investigation including but not limited to the following tasks: setting up witness interviews, conducting a structured investigation, determining root cause to prevent recurrence of mishap or similar mishaps, initiating corrective actions (as necessary).
- f. Conduct an investigation and prepare, initiate, and sign the Institutional Division's Mishap Investigation Input sheet. Specific actions may include:

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- (1) Visiting the mishap scene while complying with all safety requirements.
- (2) Photographing mishap scene, if necessary, as soon possible.
- (3) Interviewing injured CS and any witnesses.
- (4) Protecting evidence, documents, records, witness statements, and other artifacts by placing them into a secured area (e.g., password-protected computer, lockable file cabinet) when not in use.
- (5) Protecting the integrity of the investigation by not discussing it.
- (6) Participating in meetings, preferably within a securable area designated as the meeting area.
- (7) Obtaining procedures, training records, manufacturer's data, company policies, safety and health plans, configuration management information, employee and equipment certification information, operator logs, equipment logs, and whatever other documentation will provide insight into what may have led to the mishap or close call.
- (8) Documenting what information is known and identifying other contributing factors that may have influenced the mishap or close call.
- (9) Utilizing available resources to better understand the investigation process.
- (10) Developing and documenting corrective actions in cooperation with the CS supervisor.
- g. Provide updates to NMIS (at least every 30 days).
- h. Work with the employee's supervisor to develop, document, and implement effective correction actions to address the investigation findings and observations.
- i. Release impounded data, records, equipment, facilities, and the mishap site when they are no longer needed by the IA.
- j. Coordinate with the advisors throughout the investigation, as necessary.
- k. Refer allegations and evidence of criminal activity that are identified in the course of an investigation to the Office of Inspector General.
- I. Enter into NMIS the final mishap investigation data and actual direct cost of the mishap or, if the actual direct cost is not available, the estimate of the direct cost of the mishap.

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m. Verify corrective actions have been implemented, complete and sign the Institutional Division's Mishap Investigation Input sheet, and enter the investigation data into NMIS.

3.4.5 Legal Advisor

- a. Provide NDA if the IA uses the services of a contractor as administrative support or as a consultant.
- b. Upon request, make the determination during the investigation if a portion of the investigation is criminal and needs to be referred to the Office of the Inspector General.
- c. Attend interviews if the interviewee is accompanied by a lawyer during the interview process.
- d. Legal advisor may review witness statements and testimony in order to provide adequate legal guidance.
- e. Provide legal advice and counsel as requested by IA.

3.4.6 Medical Advisor

- a. Provide medical input on the implication of an individual's physical and mental health and well-being for the event being investigated.
- b. Provide support for evaluating drug test results and interpreting medical policy concerning drug testing.
- c. Evaluate the response of the KSC Medical Services to the incident.
- d. Evaluate whether any injuries sustained match the IA's proposed scenario, when requested.
- e. Interface with outside medical authorities.

Note: Due to privacy laws, this may not be possible without the consent of the injured individual.

3.4.7 Consultants (Nonfederal employee)

- a. Provide subject matter expertise.
- b. Sign an NDA.
- c. Advise the IA, upon request.

Note: Consultants are prohibited from the following activities in support of the IMI: participation in deliberations; signing the mishap report; reading, listening to, or participating in witness interviews unless they are tasked to analyze interviews and

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they have signed a nondisclosure agreement authorized by the NASA Office of the General Counsel or Center Chief Counsel.

3.4.8 Mishap Investigation Program Office

Provide assistance and support when requested.

3.5 Mishap Investigation Report

IA completes the Institutional Division's Mishap Investigation Input sheet and enters the completed data into NMIS.

3.6 Post-Investigation Activities

3.6.1 Corrective Action Plan Development

3.6.1.1 Investigating Authority

Work with the employee's supervisor to develop an actionable corrective action plan addressing the root cause to prevent mishap recurrence (source: NPR 8621.1).

3.6.2 CAP Implementation

3.6.2.1 Civil Servant's Responsible Organization

Implement the corrective actions (CA) to prevent mishap recurrence or similar mishap occurrence.

3.6.2.2 Investigating Authority

- a. Request the CAP estimated completion date (ECD).
- b. Verify CA has been implemented and is complete prior to closing the mishap in NMIS.

Note: If CA is not implemented by the ECD negotiate a new ECD with the employee's supervisor.

- c. Once the CA has been verified notify the employee's supervisor of completion.
- d. Ensure mishap report with supporting material is entered into NMIS.

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CHAPTER 4: CONTRACTOR / GRANTEE TYPE C AND TYPE D MISHAPS AND CLOSE CALL

4.1 Readiness to Conduct Investigations - Contractor / Grantee

- a. Support and follow all aspects of the mishap and close call reporting, investigating, and recordkeeping life cycle as defined within contractual requirements (e.g., contracts, agreements).
- b. Ensure employees understand and implement mishap and close call reporting, investigating, and recordkeeping as defined within contractual requirements.

4.2 Mishap Response, Notification, and Classification

4.2.1 Mishap Response

4.2.1.1 Employee

- a. Take all necessary steps to protect themselves and fellow employees.
- b. Immediately:
- (1) Cease work following any accident, even if there are no apparent injuries / damage.
- (2) Report all accidents involving injury to people to 911 or 867-7911 by cell phone or 853-0911 from CCAFS.
- (3) Report all equipment or property damage or both which possesses the potential to cause a mishap or close.
- (4) Secure the scene and do not allow access until released by the appropriate safety official.
- (5) Report for medical evaluation and treatment to the Occupational Health Facility (OHF) or, if not located at KSC, to a licensed health care provider as called out in the Contractor's contract for personnel exposure or suspected exposure to a hazardous substance exceeding allowable limits (quantity level or exposure time).

4.2.1.2 Employee's Supervisor

- a. After the initial notifications are made, provide any necessary assistance to safe the mishap site until the emergency response, security, or safety arrives.
- b. Support the IC, Protective Services, and Safety personnel to safe the mishap site.
- c. Initiate drug testing accordance with the provisions of the applicable contract provisions.

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d. Complete the initial mishap or close call reporting in accordance with the applicable contract, grant, or agreement.

4.2.1.3 Emergency Response / Incident Commander

- a. Relinquish site command to the contractor / grantee after completion of all rescue efforts, determination that there is no evidence of criminal wrongdoing, and coordination with Protective Services.
- b. Provide the contractor / grantee with all evidence gathered at the scene unless criminal wrongdoing is suspected.

4.2.1.4 Protective Services

- a. Determine if a security investigation is warranted due to any evidence of criminal wrongdoing.
- b. Provide the contractor / grantee with all evidence gathered at the scene unless criminal wrongdoing is suspected.

4.2.1.5 Chief, Safety and Mission Assurance Division

Upon request, assist contractor or grantee in their mishap response.

4.2.2 Mishap Notification, and Classification

4.2.2.1 Employee

Notify the appropriate safety office, the Responsible NASA Organization, and immediate supervisor.

4.2.2.2 Employee's Supervisor

If not already accomplished, immediately notify the appropriate authorities (911 or 867-7911 by cell phone or 853-0911 from CCAFS, fire, ambulance, Center security office, S&MA, supervisor, etc.) after a mishap or close call.

4.2.2.3 Responsible Organization

- a. Notify Institutional Division when a mishap or close call occurs by calling 867-7233 (7-SAFE).
- b. Within four hours of the event (or by 7:30 AM the next workday for mishaps occurring during shifts other than first shift), the responsible contractor organization will submit an initial report (e-mail or fax) to their responsible NASA Safety Division, the Institutional Safety Division and the MIPO.

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Note: Initial notification is to include the time, the location, a description of the event, the organization(s) involved in the event, and a preliminary worst case estimate of the injuries / illness and damage resulting from the event.

- d. All on-site incidents involving Government property damage in excess of \$5,000 (excluding government owned vehicle damage less than \$20,000) will be recorded into NMIS with the classification of "non 8621 reportable."
- All contractor mishaps and associated corrective actions will be entered into the NMIS database, updated when changes occur (every 30 days at a minimum), and tracked to closure.

4.2.2.4 Chief, Institutional Division

- a. Ensure contractor / grantee make the necessary entries into NMIS.
- b. Within 24 hours of becoming aware of a contractor / grantee days away mishap, report the incident to the Institutional Safety Division and the MIPO.

4.3 Investigating Authority and Investigation Support Selection

4.3.1 Safety and Mission Assurance Director

- a. Delegates KSC on-site investigating authority to the contractor / grantee for Type C, Type D, and Close Call mishaps involving company employees and property.
- b. May delegate KSC on-site investigating authority to the contractor or grantee for Type C, Type D, and Close Call mishaps involving Government property damage (including flight hardware, ground processing equipment, and the ground facility). Contractor investigates mishaps in accordance with the applicable contract, grant, or agreement provisions.
- c. Reserves the right to appoint a KSC-NASA IA to investigate any KSC mishap or close call.

Note: A Center mishaps involving a contractor / grantee, the KSC S&MA Director may determine that a NASA investigation would be in Center's best interest. If determined to be in Center's best interest, the mishap is reclassified as a Center High-visibility (CHV) mishap and NASA will perform a mishap investigation.

Note: In those cases that are not KSC mishaps [i.e., solely involve a contractor or grantee mishap or close call at an offsite location, arising out of work performed under a NASA contract (on KSC property), and the contractor / grantee is required to investigate pursuant to NASA FAR Supplement 1852.223-70, NASA Safety and Health], the KSC appointing official is not required to appoint a separate KSC IA unless the contractor's / grantee's mishap report indicates that a NASA KSC policy or procedure was a causal factor or contributing factor and a NASA KSC change is warranted.

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Note: NASA Privileged Witness Statements can only be taken by a Federal employee.

4.3.2 Contractor and Grantee Mishap investigator

Mishap investigators will complete training in and been tested on the NASA mishap investigation policy and process (source: NPR 8621.1).

4.4 Mishap Investigation Process

4.4.1 Contractor, Grantee and Partner Mishaps

- a. A contractor, grantee, and partner on-site injury or illness that is classified as a Type C, Type D, or close call mishap that occur at KSC are to be investigated by the established legal contracts, grants, agreements, Center directives / policies and NPR 8621.1 with the exception of taking privileged witness statements.
- b. All contractor, grantee, and partner mishap and close calls corrective actions are to be entered into the NMIS database, updated when changes occur (at least every 30 days), and tracked to closure.
- c. The contractor provides the required NMIS fields to satisfy NPR 8621.1 to satisfy and Center requirements.

4.4.2 NASA Responsible / Cognizant Safety Organization

- a. Verify that NASA contractors, grantees, and tenants conduct mishap investigations and provide mishap reports as specified in their contracts, grants, agreements to satisfy NPR 8621.1 and NASA Federal Acquisition Regulations (FAR) Supplement 1852.223-70.
- b. Monitor NMIS for contractor's mishap status through mishap investigation, approval, and closure.

4.5 Mishap Investigation Report

4.5.1 Mishap Report Process

- a. The mishap report and NMIS entries are to be written to satisfy NPR 8621.1.
- b. The completed mishap investigation must be delivered to NASA Responsible / Cognizant Safety Organization for approval.

4.6 Post-Investigation Activities

4.6.1 Corrective Action Plan Development

4.6.1.1 Contractor / Grantee Organization

a. Develop a CAP to prevent recurrence of similar mishap.

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Note: NASA Cognizant Safety Organization may assist with the CAP development when requested.

b. Submit the CAP to their responsible / cognizant NASA Safety organization for review and approval.

Note: NASA Cognizant Safety Organization has the option of completing the corrective action approval process or requesting additional corrective actions.

4.6.2 CAP Implementation

4.6.2.1 Contractor / Grantee Organization

- a. Implement the corrective actions to prevent mishap recurrence.
- b. Track the corrective action performance through completion in NMIS.

 Note: NMIS assistance is available from the Institutional Division NMIS Administrator.
- c. Provide corrective action status updates to NMIS at least every 30 days.
- d. Maintain a complete package of corrective action documentation to facilitate corrective action verification.

4.6.3 Mishap Close Out

4.6.3.1 NASA Cognizant Safety Organization

- a. Monitor corrective action activities to determine if these actions were carried out according to NPR 8621.1 and this plan.
- b. Review the contractor, grantee, and tenant investigations to ensure root cause was identified and their corrective actions prevent mishap recurrence.
- c. May report noncompliance to the S&MA Director or designee, as necessary.
- d. Verify that the CAP has been implemented to address the mishap investigation findings.
- e. Verify all elements of the investigation have been completed.
- f. Ensure NMIS contains the actual direct cost of the mishap or, if the actual direct cost is not available, the estimate of the direct cost of the mishap.
- g. Verify that the contractor or grantee has completed all the required NMIS data fields identified in NPR 8621.1, prior to closing the mishap in NMIS.

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APPENDIX A: DEFINITIONS

<u>Center High visibility Mishap or Close Call (CHV)</u> - An event that possessed the potential to cause a serious injury or illness to a federal or contractor employee working on a NASA-managed activity and that the Center determines it would be in NASA's best interest to investigate.

<u>Center Release</u> - Available for review by all KSC employees (federal and contractor) as a method of providing information for similar mishap prevention. The document is posted on an internal website that is not available to the general public or other NASA centers.

<u>Cognizant Safety Organization</u> – The S&MA organization responsible for providing safety oversight (e.g. contractual, program / project...) for NASA-managed activities and for mishap reporting, response, recording, tracking and closure.

<u>Privileged Witness Statement -</u> Testimony to safety investigators is accorded privileged, limited-use status, and witnesses are guaranteed confidentiality to the greatest extent permitted by law. It is otherwise unsworn, since investigators are specifically prohibited from taking safety-related testimony under oath.

<u>Responsible Organization</u> - The organization responsible for the activity, people, operation, or program, where a mishap occurs or the lowest level of organization where corrective action will be implemented.

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APPENDIX B: ABBREVIATION LIST

AO Appointing Official
ASO Aviation Safety Officer

BA Human Resources Directorate

CAP Corrective Action Plan
CC Office of the Chief Counsel

CCAFS Cape Canaveral Air Force Station

CD Center Director
CHV Center High-Visibility
CID Chief, Institutional Division

COR Contracting Officer Representative

CS Civil Servant

EAR Export Administration Regulations

ECD Estimated Completion Date FOIA Freedom of Information Act

HQ NASA Headquarters
IA Investigating Authority
IC Incident Commander

IMI Individual Mishap InvestigatorIRT Interim Response TeamISS International Space Station

IT Information Technology and Communications Services Directorate

ITAR International Traffic in Arms Regulations

KDP Kennedy Documented Procedure KNPD Kennedy NASA Policy Directive

KNPR Kennedy NASA Procedural Requirements

KSC Kennedy Space Center

LLIS Lessons Learned Information System

LSP Launch Services Program

MDAA Mission Directorate Associate Administrator

MIB Mishap Investigation Board

MIPO Mishap Investigation Program Office

MIT Mishap Investigation Team

MPCP Mishap Preparedness and Contingency Plan
NASA National Aeronautics and Space Administration
NFS NASA Federal Acquisition Regulation Supplement

NHV NASA High-visibility

NMIS NASA Mishap Information System
NPR NASA Procedural Requirements
OHF Occupational Health Facility
OIG Office of the Inspector General

OP Procurement Office

OSHA Occupational Safety and Health Administration

OSMA Office of Safety and Mission Assurance (NASA Headquarters)

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PX Communication and Public Engagement Directorate

PLN Plan

POC Point of Contact

PPE Personal Protective Equipment RCAT Root Cause Analysis Tool RO Responsible Organization

SATERN System for Administration, Training and Educational Resources for NASA

SBU Sensitive But Unclassified S&MA Safety and Mission Assurance

SI Spaceport Integration and Services Directorate

WebTADS Web-based Time and Attendance Distribution System

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APPENDIX C: UNIQUE MISHAP AND CLOSE CALL CLASSIFICATION

INJURIES INCURRED AS A RESULT OF A RECREATIONAL ACTIVITY

Recreational activity injuries will be classified as NASA mishaps if the employee is on duty and is required to participate for job certification, training or by labor agreement. Each program / project or directorate organization sponsoring such recreational activity will determine which activities employees can perform. Recreational activities should be designed to minimize the potential for personal injury. Injuries resulting from off-duty use of KSC exercise facilities are not classified as NASA mishaps. On-duty, non-sponsored recreational activities are prohibited.

MUSCULOSKELETAL DISORDERS (MSD)

Lost Time / Days Away cases due to a MSD or repeated trauma injury or illness will be classified as a mishap. For these cases, the date of diagnosis by a licensed health care provider or the first official lost time day, whichever occurs first, is the reported date that will be entered into the NMIS database.

OCCUPATIONAL ILLNESS

For cases of occupational illness due to long term exposure to hazards, such as asbestosis, silicosis or hearing loss, the date of diagnosis by a licensed health care provider or the first official lost time / days away, whichever occurs first, is the date that will be entered into the NMIS database.

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Appendix D: 2807 - GENERIC QUICK-LOOK NOTIFICATION

Mishap Quick Sheet

What to do in the First 30 Minutes if You are Notified of a Mishap Audience: Division Chief and Deputy Division Chief Scenario: S&MA Employee receives notification of mishap

B-G-DDET eneric Basic

ACTIONS:

STEP 1: S&MA Employee: Collect information regarding the following (No Decisions at this point):

- Who or what was involved?
 - Civil Service
 - Other [Contractor(s) involved]
- Severity of mishap?
 - Fatality or serious injury (Type A, B or High Visibility)
- Other (Type C, D or Close Call)
 Who owns the mishap (Directorate, Controlling Employer) / Direct Supervision)?
 - Program / Project may have additional notifications
 - Institution (KSC-managed activities, not Program / Project managed activities)

STEP 2: S&MA Org.: notify [KSC Mishap Investigation Office (MIPO), 867-7233, option #2, Responsible Division Chief or Deputy Division Chief]:

- Share mishap information with S&MA Director. Deputy Director & SA-E Division Chief
- S&MA Director or Designee with KSC MIPO assistance determine mishap classification (Worst case scenario, based on facts at the time)
 If determined a Type A, B, NASA High-Vis or Center High-
- Vis) SA-E Management deploys a trained Interim Response Team (IRT)
- If the Cognizant Program / Project S&MA POC / IRT
- respond, the IRTs will work togethersc IRT Lead communicates back to the Responsible / Cognizant Organization & KSC MIPO
- If not a "Serious Mishap" No IRT is needed

Additional Information: OTHER: You may receive calls from anyone

- If you are called, pass on ONLY facts as needed
- Direct all external communications to Communication and Public Engagement Directorate (PX)
 - PX Deputy Director
- If you don't know, it is OK to say that you are waiting on facts from the IRT. <u>ONLY GIVE FACTS!</u>

S&MA Director Does NOT Need to Notify:

- CD: Responding Incident Commander notifies CD / SI
 - OSMA: MIPO or SA-E notify Gerry Schumann if a Type A, B or NASA High-Vis within 1 hour of learning the details
- Public Affairs: Is notified when EMS is dispatched
- OSHA: SA-E will make necessary notifications within 8 hours and follow-up with OSMA, if needed

Civil Servant Fatality ONLY: Notify BA as soon as possible, they will notify the next of kin (KDP-KSC-P-3129)

A recordable injury results when: An employee performing work-related activities for the benefit of the employer experiences medical treatment beyond first aid, days away from work, restricted work or transfer to another job, or loss of consciousness while on the Center (company's premises) during the employee's scheduled work hours (includes work breaks and lunch).

S&MA Division Chief or Deputy Division Chief: If you are contacted about a Serious Mishap contact the Center MIPO (7-7233, option 2) or SA-E Division Chief